

A TEAL FROM THE LOWER PLIOCENE OF KANSAS

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Among fossil birds sent for identification by Dr. Claude W. Hibbard is a specimen of a teal from the Lower Pliocene of northwestern Kansas. Only six Tertiary teals have been described, and these are referable to the living genera or subgenera *Querquedula* Stephens and *Nettion* Kaup.

The record of *Querquedula* starts in the Lower Miocene with *Q. natator* (Milne-Edwards, 1867) from the Aquitanian of France and *Q. integra* A. H. Miller (1944) from the Rosebud formation of South Dakota. The only other Tertiary species is *Q. pullulans* Brodkorb (1961) from the Lower Pliocene of Juntura, Oregon.

Nettion first appears in the Middle Miocene with *N. velox* (Milne-Edwards, 1867) from the Helvetian of France. This is followed in the Lower Pliocene by *N. eppelsheimensis* (Lambrech, 1933) from the Dinotheriensande of Germany. In the Upper Pliocene *N. bunkerii* Wetmore (1944) occurs in the Rexroad formation of Kansas and the San Pedro Valley formation of Arizona. It has also been identified from the Middle Pliocene at McKay, Oregon (Brodkorb, 1958), and the record of this genus from the Hemphill formation of Texas (Compton, 1934) may also apply here.

The fossil from northwestern Kansas represents an additional species of *Nettion*.

Nettion ogallalae, new species

Figure 1

Holotype. Distal half of left humerus, University of Michigan Museum of Paleontology, no. 41458. From Ogallala formation of Lower Pliocene, in the SW corner of section 15, Township 11 South, Range 22 West, Trego County, Kansas. Collected by Claude W. Hibbard and Jerry Paulson, August 2, 1959. The type locality lies 6½ miles north and 1¼ miles west of Ogallah, Kansas, or 6½ miles northeast of the county seat of Wakeeney.

Diagnosis. Agrees with *Nettion* in having ectepicondylar process inclined distally toward palmar face of bone (process nearly parallel with shaft in *Querquedula*); entepicondylar prominence

compressed and rotated anconally, so that area of origin of pronator longus is produced medially almost to edge of bone and in palmar view largely overhangs area of origin of flexor carpi ulnaris (in *Querquedula* anconal rotation slight, with area of origin of flexor carpi ulnaris produced medially far beyond scar of pronator longus); upper end of scar of flexor carpi ulnaris distal to upper end of scar of pronator longus and distal to bend in entepicondyle (in *Querquedula* upper end of scar of flexor carpi ulnaris extends proximally from those points).

Differs from living *N. crecca* (Linnaeus) in having ectepicondyle with its distal end rounded in lateral view and falling short of distal end of external condyle (in *N. crecca* ectepicondyle produced in a



Fig. 1. *Nettion ogallalae*, n. sp. Holotype humerus (actual length, 24.8 mm.).

point that extends distally about as far as distal end of external condyle); largest foramen on palmar face located close to tip of external condyle (foramen more medial in *N. crecca*); scar of pronator longus with even stronger medial thrust; size smaller than in this or described fossil species.

Measurements. Distal width, 8.7; width of shaft, 4.0 mm. Corresponding measurements of eight specimens of *N. crecca* are 9.0-9.5 and 4.2-4.6 mm. *N. velox* is similar in size to *N. crecca*. In *N. eppelsheimensis* the distal width is 9.8 mm. The humerus of *N. bunkerii* is still unknown, but this species is also relatively large, for the coracoid, carpometacarpus, and tibiotarsus are larger and more robust than in *N. crecca*.

Associated fauna. Vertebrates previously reported from the Ogallala formation in Trego County include a catfish (*Ictalurus lambda* Hubbs and Hibbard), a beaver (*Eucastor* cf. *tortus* Leidy), a small mylagaulid rodent (*Epigaulus minor* Hubbs and Phillis), a small horse (*Nannippus* sp.), and an indeterminate small camel (cf. Hibbard and Phillis, 1945; Hubbs and Hibbard, 1951).

It is of interest that three of the mammals from this locality are small, and the teal described above is the smallest member of its genus. A similar tendency toward small size is exhibited by the birds from the Lower (and Middle?) Pliocene beds at Juntura, Oregon (Brodkorb, 1961). Under Bergmann's rule this is to be interpreted as reflecting elevated temperatures in the northern parts of the Great Plains and Great Basin during early Pliocene time.

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